P2SC-ROB-WR-072-20110801 Weekly report #072	**P2SC Weekly report**	
Period covered: Date: Written by: Released by:	Mon Aug 01 to Sun Aug 07 2011 2011/08/11 M. Dominique D. Berghmans	Royal Observatory of Belgium PROBA2 Science Center
To:	LYRA PI, marie.dominique@sidc.be SWAP PI, david@sidc.be	http://proba2.sidc.be ++ 32 (0) 2 373 0 559
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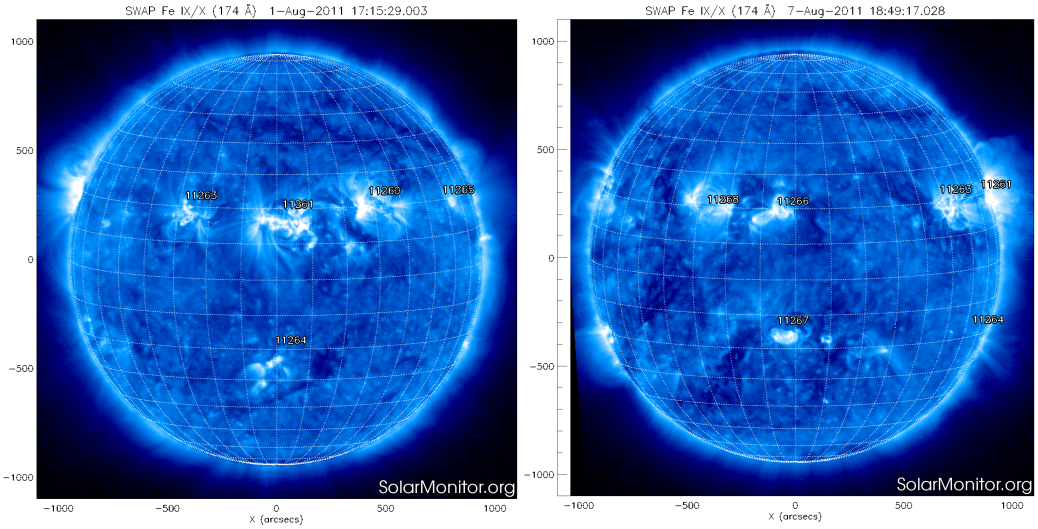
1. Science

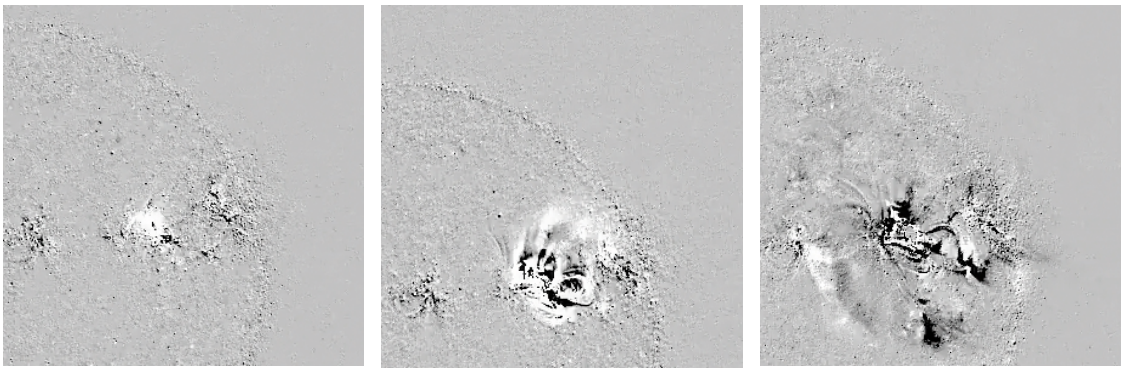
Solar & Space weather events

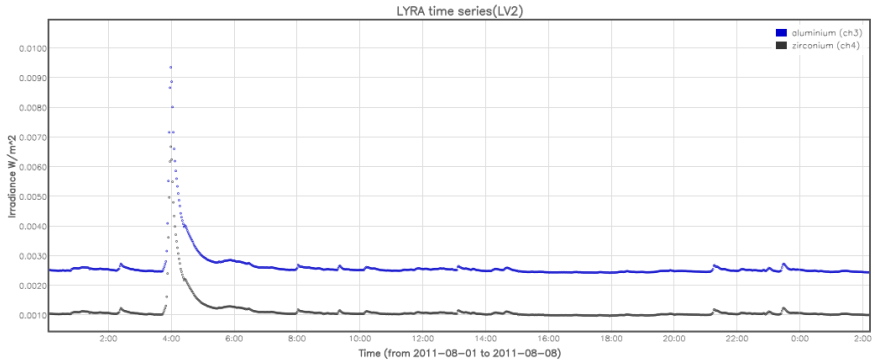
Overview

The SWAP images of Aug 1 and Aug 7 are shown below, with annotated active regions:

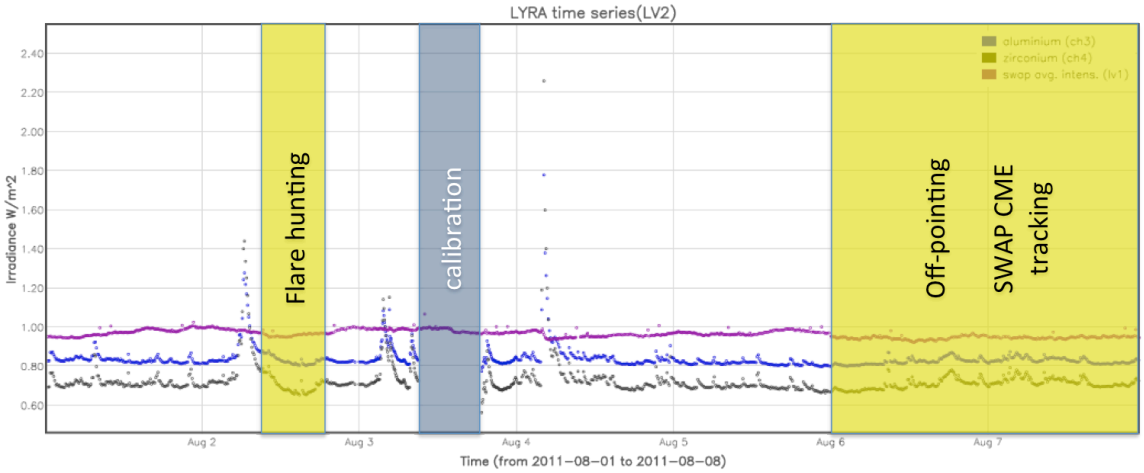


The Sun has been active during the whole week, with about 50 C flares, 5 M flares, and several CMEs. Most of the activity was produced by AR 11261 and 11263. The most noticeable event was an M 9.3 flare that happened on Aug 04 at 04:00 AM. This flare was associated to a CME and an EUV wave.





Week overview of LYRA Al/Zr signals and SWAP average intensity (SWAVINT in purple):



The calibration campaigns are annotated in blue, other campaigns in yellow, and data gaps in red. The peaks in LYRA signals are due to solar flares. The tiny, periodical peaks in SWAVINT were caused by crossing over the SAA.

Specific events:

From Aug 03 07:00 to Aug 05 07:00, LAR were implemented with a delay of 8 minutes. This campaign follows the ones of the previous weeks, and aims at determining the maximum cooling effect that can be expected on SWAP by modifying the LAR time.

Scientific campaigns

- Aug 02, 09:55 - 15:00: Lyra unit3 was open in the frame of a flare hunting campaign, which is dedicated to flare observation in lyman alpha
- Aug 03, 09:00 - 18:37: bi-weekly Lyra calibration campaign (LREP_02)

- Aug 04, 09:14 - 09:43: weekly ESP campaign
- Aug 06-07: Swap CME tracking campaign. The spacecraft off-pointed of 8.5 arcmin to target a region is which CMEs were susceptible to develop

Outreach, papers, presentations, etc.

Guest investigator S. Pastoukaros was visiting this week.

To be explored
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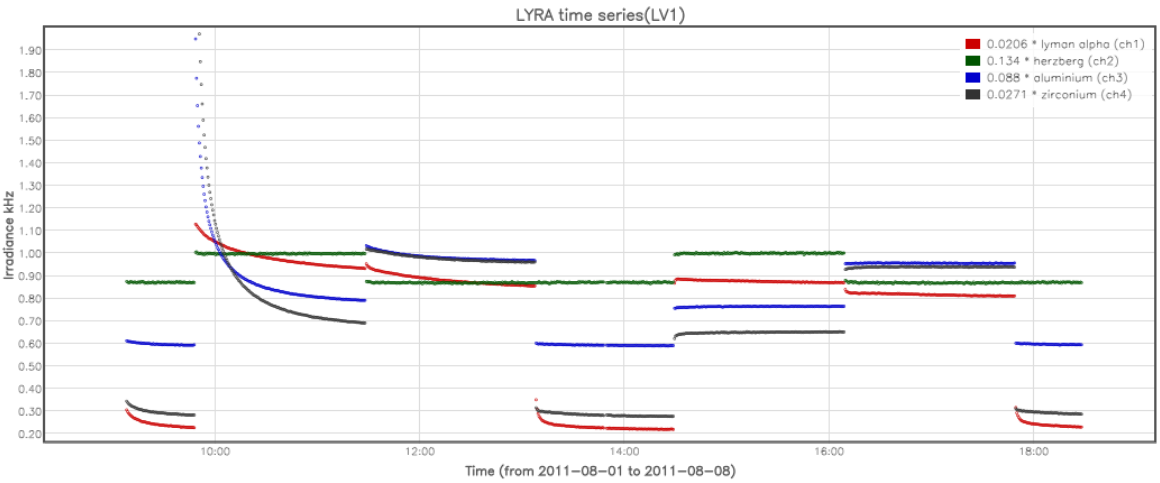
2. LYRA instrument status

Calibration

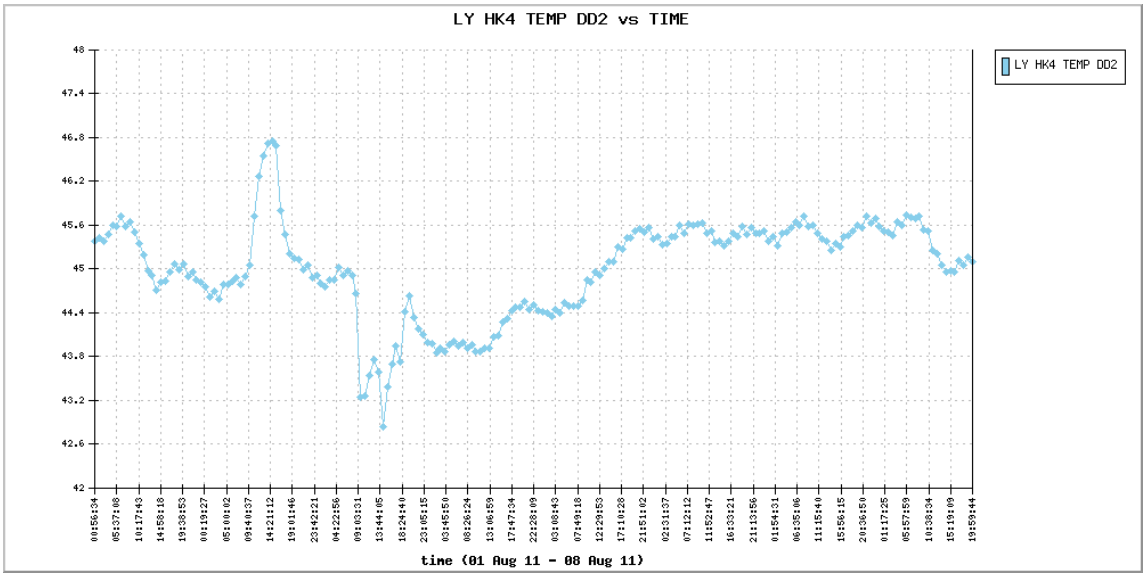


IOS & operations

Monday 01 Aug	Tuesday 02 Aug	Wednesday 03 Aug	Thursday 04 Aug	Friday 05 Aug	Saturday 06 Aug	Sunday 07 Aug
Nominal acquisition LYIOS00183	Nominal acquisition + Lyra flare hunting (09:55 - 15:00) LYIOS00184	Nominal acquisition + LREP_02 (09:00 - 18:37) LYIOS00185	Nominal acquisition LYIOS00185	Nominal acquisition LYIOS00185	Nominal acquisition + off-pointing LYIOS00185	Nominal acquisition + off-pointing LYIOS00185

LYRA detector temperature

The LYRA detector 2 temperature (nominal unit) fluctuated between 42.8 and 47 degrees Celsius. Effects were seen of the DSLP and Lyra flare tracking campaigns, and of Lyra calibration.



To be explored
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3. SWAP instrument status

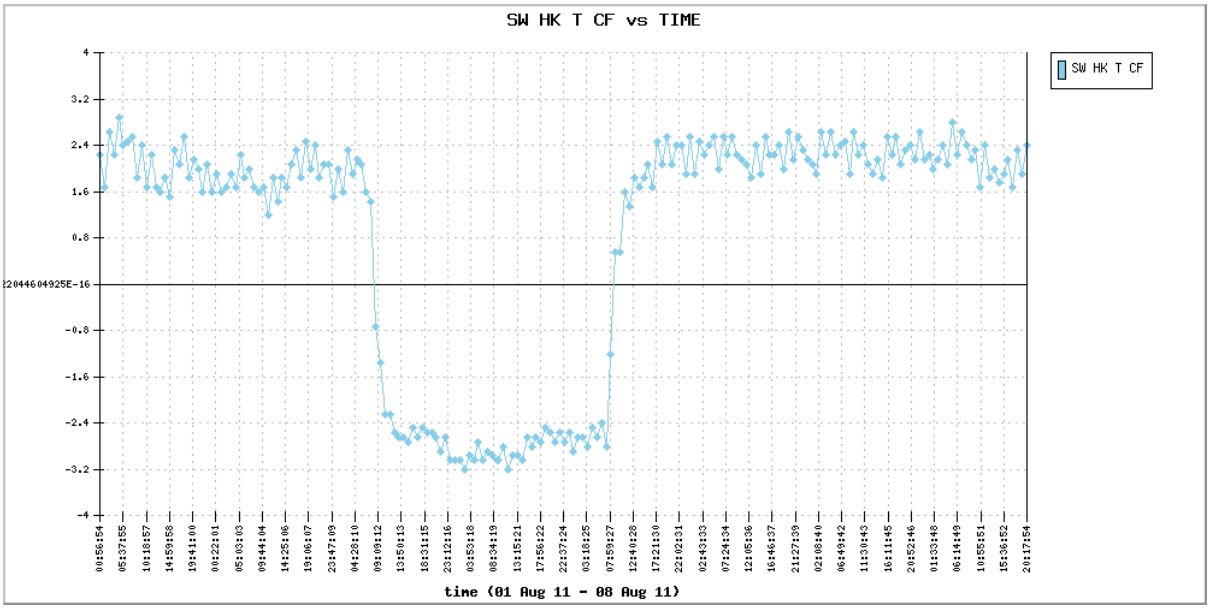
Calibration: /

MCPM recoverable errors
increased from 149 to 183 this week.
The number of MCPM unrecoverable errors is still 0.

IOS & operations

Monday 01 Aug	Tuesday 02 Aug	Wednesday 03 Aug	Thursday 04 Aug	Friday 05 Aug	Saturday 06 Aug	Sunday 07 Aug
Nominal acquisition IOS00319 707 images	Nominal acquisition IOS00319 740 images	Nominal acquisition IOS00319 689 images	Nominal acquisition + ESP campaign IOS00320 597 images	Nominal acquisition IOS00320 652 images	Nominal acquisition + CME track. campaign IOS00321 697 images	Nominal acquisition + CME track. campaign IOS00321 755 images

SWAP detector temperature
The SWAP Cold Finger Temperature fluctuated between 1.5 and 3 degrees Celsius, except during the LAR delay test, when it droped down to -3 degrees Celsius.



To be explored
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4. PROBA2 Science Center Status

M. Dominique was operator during this week.

The following tools were updated on the operational server: /

5. Data reception & discussions with MOC

Passes
Data reception this week was globally good, with the exception of pass 5325, for which we had gaps in housekeepings, Lyra and Swap data. The packets were re-extracted by Redu, which partly solved the problems (no remaining gap in HK, cadence decreased but no real gap in LYRA data). Nevertheless, some corrupted data could not be recovered.
In addition, the following passes contained missing data: 5335, 5340, 5344

Data coverage HK
The HK data were complete this week.

Data coverage SWAP

Statistics for complete week:
Total number of images between 2011 Aug 01 0UT and 2011 Aug 08 0UT: 4935
Highest cadence in this period: 110 seconds
Average cadence in this period: 122.55 seconds
Number of image gaps larger than 300 seconds: 3
Largest data gap: 29.00 minutes

The 29 min gap corresponds to the ESP campaign, but the two other gaps of 330s are real and correspond to missing data from pass 5325.
Data coverage LYRA The HK data were complete this week (see overview in Sect.1), although some time intervals downloaded with pass 5325 could only be recovered with a half-rate sampling.

6. APPENDIX Frequently used acronyms

ADP	Ancillary Data Processor
ADPMS	Advanced Data and Power Management System
AOCS	Attitude and Orbit Control System
APS	Active Pixel image Sensor
ASIC	Application Specific Integrated Circuit
BBE	Base Band Equipment
CME	Coronal Mass Ejection
COGEX	Cool Gas Generator Experiment
CRC	Cyclic Redundancy Check
DR	Destructive Readout
DSLP	Dual Segmented Langmuir Probe
EIT	Extreme ultraviolet Imaging Telescope
FITS	Flexible Image Transport System
FOV	Field Of View FPA Focal Plane Assembly
FPGA	Field Programmable Gate Arrays
GPS	Global Positioning System
HAS	High Accuracy Star tracker
HK	Housekeeping
ICD	Interface Control Document
IIU	Instrument Interface Unit
IOS	Instrument Operations Sheet
LED	Light Emitting Diode
LEO	Low Earth Orbit
LYRA	LYman alpha RAdiometer
LYTMR	LYRA Telemetry Reformatter (software module of P2SC)
LYEDG	LYRA Engineering Data Generator (software module of P2SC)
MCPM	Mass Memory, Compression and Packetisation Module
MOC	Mission Operation Center
NDR	Non Destructive Readout
OBET	On board Elapsed Time
OBSW	On board Software
PE	Proximity Electronics
PGA	Programmable Gain Amplifier
PI	Principal Investigator
P2SC	PROBA2 Science Center
PPT	Pointing, Positioning and Time (software module of P2SC)
ROB	Royal Observatory of Belgium
SAA	South Atlantic Anomaly
SCOS	Spacecraft Operation System
SEU	Single Event Upset
SOHO	Solar and Heliospheric Observatory
SWAP	Sun Watcher using APS detector and image Processing
SWAVINT	SWAP AVerage INTensity

SWBSDG	SWAP Base Science Data Generator
SWEDG	SWAP Engineering Data Generator (software module of P2SC)
SWTMR	SWAP Telemetry Reformatter (software module of P2SC)
TBC	To Be Confirmed
TBD	To Be Defined
TBW	To Be Written
TC	Telecommand
TPMU	Thermal Plasma Measurement Unit
UTC	Coordinated Universal Time
UV	Ultraviolet